

**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions and listings of claims in the application:

**LISTING OF CLAIMS**

1. (original) A process for fabricating ohmic contacts in a field-effect transistor, the transistor comprising a layered semiconductor structure which includes:

a) a group III nitride compound first semiconductor layer having a first band gap and doped with a charge carrier; and

b) a group III nitride compound second semiconductor layer having a second band gap that is less than said first band gap and positioned below said first semiconductor layer to generate an electron gas in said semiconductor structure, the process including the steps of:

i) thinning the first semiconductor layer, forming recessed portions in said first semiconductor layer;

ii) depositing ohmic contacts over said recessed portions; and

iii) heating said deposited ohmic contacts,

whereby, after the heating step, said ohmic contacts communicate with said electron gas.

2. (original) The process of claim 1, wherein said first semiconductor layer comprises aluminum gallium nitride (AlGaN) and said second semiconductor layer comprises gallium nitride (GaN).

3. (original) The process of claim 1, wherein said ohmic contacts comprise titanium, aluminum, nickel and gold.

4. (original) The process of claim 3, wherein said ohmic contacts comprise 6% titanium, 65% aluminum, 13% nickel, and 16% gold.

5. (original) The process of claim 1, wherein said step of thinning the first semiconductor layer is performed through a reactive ion etching (RIE) process.
6. (original) The process of claim 5, wherein said reactive ion etching (RIE) process employs chlorine ( $\text{Cl}_2$ ).
7. (original) The process of claim 6, wherein said reactive ion etching process (RIE) thins the first semiconductor layer according to a linear function of time.
8. (original) The process of claim 7, wherein said reactive ion etching (RIE) process has an etching time of about 45 seconds.
9. (original) The process of claim 1, wherein said ohmic contacts are source ohmic contacts.
10. (original) The process of claim 1, wherein said ohmic contacts are drain ohmic contacts.
11. (original) The process of claim 1, wherein said ohmic contacts are heated at a temperature of about 875 °C.
12. (original) The process of claim 1, wherein said recessed portions in said first semiconductor layer have a thickness corresponding to 2/3 of the thickness of said first semiconductor layer.
13. (original) The process of claim 12, wherein the thickness of said recessed portions is about 200 Angstrom.
14. (original) The process of claim 1, wherein said ohmic contacts are made of a metal system comprising a plurality of metals, and wherein the step of heating alloys said ohmic contacts.

USSN: 10/600,521  
Group No. 2815  
Examiner: Brock II, Paul E  
Page 4

15. (original) The process of claim 14, wherein said metal system comprises titanium, aluminum, nickel and gold.

16. (original) The process of claim 1, wherein the field-effect transistor is a heterojunction field-effect transistor (HFET).

17. - 32. (canceled)

\* \* \*